

A NEW PREDACEOUS WATER BEETLE FROM THE
EASTERN UNITED STATES (COLEOPTERA: DYTISCIDAE)¹

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ABSTRACT

Hydroporus (Sternoporus) psammodytes is described as new from Indiana, Tennessee, Alabama, and Georgia. It most closely resembles *H. blanchardi* Sherman.

The small *Hydroporus* described below belongs to the psammophilus group of species which occur widely in sandy or silty stream margins throughout the Eastern United States and southern Canada. It is probably mixed in collections with *H. blanchardi* Sherman to which it will key in H. C. Fall's revision (1923). I suspect that it will be found to be widely distributed in the eastern states west of the Appalachians.

Hydroporus (Sternoporus) psammodytes Young, **new species**

DIAGNOSIS: A small, shining, somewhat flattened *Hydroporus* about 2.9 to 3.3 mm long, widest across basal 1/3 of elytra and strongly attenuate behind. Similar to *H. blanchardi* Sherman, but differing in the male external genitalia (Figs. 2-4), coarser punctation particularly of the elytra, narrower prosternal process, reduced prosternal protuberance, and different pattern of melanization on the elytra (Fig. 1). Superficially similar to members of the *H. pulcher* LeConte group, especially *H. vitiosus* LeConte and *shermani* Fall but the male genitalia of both of those species are basically different and the male protarsal claws of *shermani* are differently modified. Superficially similar also to the *H. vittatipennis* G. & H. group of species, but larger than any of them and differing in the lateral margins of the pronotum which are narrow, but distinct and widened anteriorly as in most members of the subgenus. The prosternal file is lacking, but the prosternal protuberance is distinct.

HOLOTYPE MALE: Total length 3.0 mm; greatest width near basal 1/3 of elytra 1.6 mm; width of pronotum at apex 0.88 mm; width of pronotum at base 1.36 mm; length of pronotum at midline 0.56 mm. Body form generally ovate, somewhat flattened, and strongly attenuate behind from the basal 1/3 of the elytra. Clypeus not thickened, it and front microreticulate and punctate much as in *blanchardi*. Pronotum shaped and laterally margined much as in *blanchardi*, but conspicuously more coarsely and less densely punctate. Elytra more attenuate behind than in *blanchardi*, and like the pronotum more coarsely punctate throughout. Microreticulation of pronotum and elytra similar to that of *blanchardi*, the surfaces shining not matte. Prosternal process narrower than in *blanchardi*, and prosternal protuberance smaller. Prosternal file lacking as in *blanchardi*. Metasternum, hind coxae,

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and basal sternites of abdomen very coarsely and irregularly punctate compared with *blanchardi*. Protarsi slightly more expanded than in female. Protarsal claws small, nearly equal in size and shape. Aedeagus of male genitalia (Figs. 2, 3) broader than in *blanchardi* (Figs. 4, 5). Color basically light brownish yellow above and below with darkening along sutures, and at joints as usual. Pronotum with a small diffuse dark area at middle of front margin. Elytra darkened (melanized) diffusely much as in Fig. 1, the pattern suggesting an intermediate condition between the strictly fasciate and strictly lineate types. Venter mostly light yellowish brown, but darkened along sides of abdominal sternites.

ALLOTYPE FEMALE: Very similar to male but somewhat larger and with elytral dark pattern more distinct (Fig. 1). Total length 3.2 mm; greatest width across basal 1/3 of elytra 1.68 mm; width of pronotum at apex 0.96 mm; width of pronotum at base 1.4 mm; length of pronotum at midline 0.6 mm.

VARIATION: The color pattern of the elytra varies somewhat in the paratype series. Some individuals are very diffusely darkened on elytra and venter so that they appear very light. Others are more heavily pigmented and similar to the allotype. Specimens from Tennessee are more heavily pigmented than others, but otherwise appear identical.

TYPE MATERIAL: Holotype, allotype, and 75 paratypes from INDIANA: Owen County, Fish Creek about 2 mi. west of Freedom. Other paratypes are designated as follows: INDIANA: Greene County, Beech Creek south of Bloomfield (34); Bartholomew County, August 1950, T. Daggy (Davidson College) (2). ALABAMA: Greene County, Stream 4 mi. n. w. of Eutaw (5); Lamar County, Stream near Sulligent (1); Lowndes County, Big Swamp Creek and stream near Haynesville (3); Perry County, Stream near Suttle (1); Pickens County, Stream near Carrollton (1). GEORGIA: Early County, Stream e. of Blakely (3). TENNESSEE: Hardeman County, August 1976, G. W. Wolf (University of Tennessee). Except where otherwise noted all type material collected by F. N. Young. Holotype and allotype deposited in the University of Michigan Museum of Zoology, Ann Arbor, Michigan. Paratypes are deposited in the Field Museum of Natural History, Chicago, Illinois, and the Florida State Collection of Arthropods, Gainesville, Florida. Others will be distributed to museums in the United States and abroad.

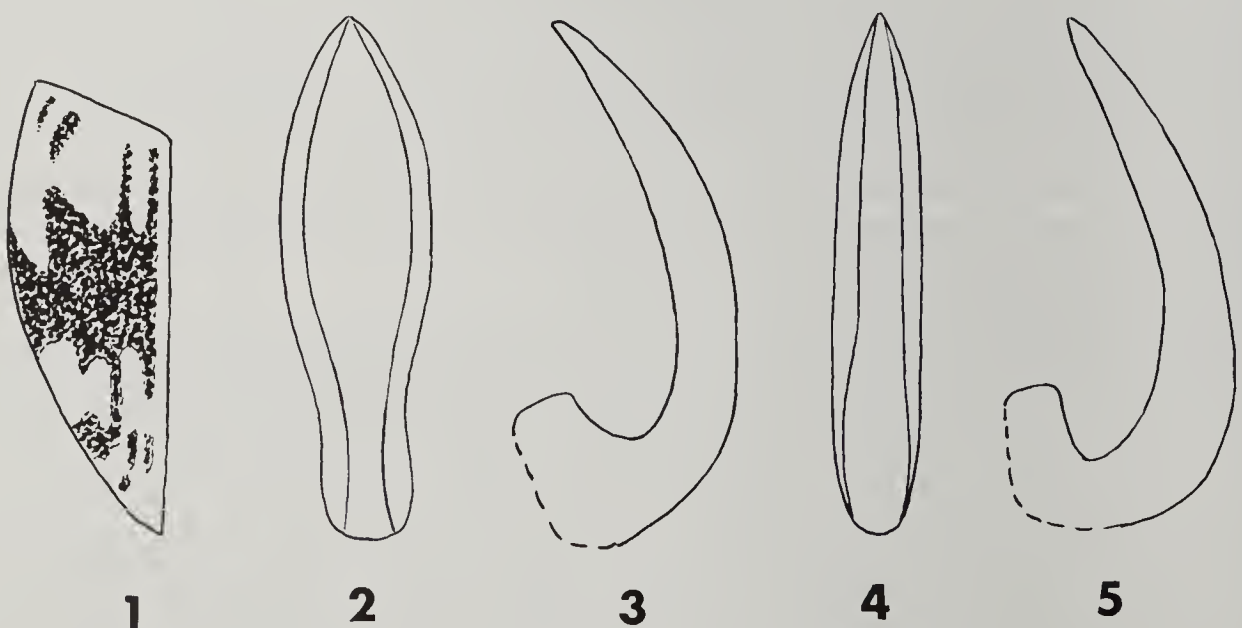


Fig. 1, Semidiagrammatic representation of pattern of pigmentation on elytron of *Hydroporus psammodytes* (Allotype female). Fig. 2, Ventral view (in copulatory position) of aedeagus of *H. psammodytes* (Topotypic male paratype). Fig. 3, Lateral view of same. Fig. 4, Ventral view (in copulatory position) of aedeagus of *H. blanchardi* Sherman (Hart County, Georgia). Fig. 5, Lateral view of same.

HABITAT: *H. psammodytes* seems to differ in habitat from other members of the *blanchardi* group, and also from the *vittatipennis-dixianus-mellitus* group. Unlike *dixianus* (Young 1955) and a number of other species of *Hydroporus*, *psammodytes* is relatively rare in the dangling root mats characteristic of the margins of many streams. Nor does it occur commonly in the gravel beds of streams in which members of the *pulcher* group usually occur. It may be more closely associated with shading than other species.

Fish Creek near Freedom in Owen County, Indiana, is a small entrenched stream heavily shaded by a mixed hardwood gallery forest. When first visited it was blocked by a log raft nearly 100 feet long and fifty wide suggesting conditions which must have prevailed widely in the forested areas of eastern North America before the first settlement. Beneath the log raft lived *Dineutes ciliatus* (Forsb.), a new record for Indiana, along with *Gyrinus marginellus* Fall, *G. aeneolus* LeConte, and a *Gyretes* probably *sinuatus* LeConte. *H. psammodytes* occurred here in abundance along the silty sand margins of the stream both above and below the log raft. With it occurred a few *Hydroporus shermani* Fall, *H. striatopunctatus* Melsh., and scattered specimens of *Cymbiodyta*, *Laccobius*, and *Enochrus pygmaeus nebulosus* (Say).

Beech Creek south of Bloomfield in Greene County, Indiana, is a somewhat larger stream than Fish Creek, but is similarly entrenched and shaded. The margins here were more exposed, but *Gyrinus marginellus* and *Gyretes* probably *sinuatus* were found under slight overhangs of the bank. *H. psammodytes* was collected in the silty sand margins along with the other *Hydroporus* found in Fish Creek and the larger *H. clypealis* Sharp.

H. psammodytes was first recognized in collections from Alabama, made after the completion of Lake Seminole (Jim Woodruff Dam) to determine the effect of the impoundment on *Hydroporus dixianus* Fall, a species apparently limited to a small area in southern Georgia, the panhandle of Florida, and southern Alabama. *H. dixianus* was found as far northwest as Crenshaw County, Alabama, but *H. psammodytes* was never found in the same habitat.

Stream size, degree of shading, and nature of the stream margin seem to be the most important factors in the habitat of *H. psammodytes*. The failure to find it in the many collections made between southern Georgia and Alabama and Indiana is probably due to failure to find the preferred minor habitat. Shading may be especially critical because most roadside collections are made in the cleared areas of streams.

REFERENCES CITED

- FALL, H. C. 1923. A revision of the North American species of *Hydroporus* and *Agaporus*. John D. Sherman, Jr., Mt. Vernon, New York, 129 p.
YOUNG, F. N. 1955. The type locality and habitat of *Hydroporus dixianus* Fall (Coleoptera: Dytiscidae). Coleop. Bull. 9(1):7-9.

